

Cite this as: Lin HUANG, Xian-yong MA, Zong-yong JIANG, You-jun HU, Chun-tian ZHENG, Xue-fen YANG, Li WANG, Kai-guo GAO, 2016. Effects of soybean isoflavone on intestinal antioxidant capacity and cytokines in young piglets fed oxidized fish oil. *Journal of Zhejiang University-Science B (Biomedicine & Biotechnology)*, 17(12):965-974.
<http://dx.doi.org/10.1631/jzus.B1600078>

Effects of soybean isoflavone on intestinal antioxidant capacity and cytokines in young piglets fed oxidized fish oil

Key words: Young piglets, Oxidized fish oil, Growth performance,
Soybean isoflavone, Antioxidant capacity

Research Summary

This review mainly focused on the effect of isoflavone on intestinal antioxidant capacity, morphology and cytokine content in young piglets fed oxidized fish oil, the key points played in the following aspects

- **The growth performance**
- **Small intestinal morphology**
- **Antioxidant capacity in jejunal mucosa**
- **Cell-mediated immunologic factors**
- **Jejunal mucosal NF- κ B, iNOS, NO and Caspase-3**

Innovation points

- **The potential protective effects of ISF on intestinal oxidative stress in very young piglets is first illustrated**
- **Dietary supplementation of ISF could partly alleviate the negative effect of oxidized fish oil by improving the intestinal morphology and antioxidant capacity and immune function in young piglets**
- **ISF reduce the intestinal cell apoptosis**

Innovation points

A series of comprehensive tables were generated to summarize the latest knowledge about isoflavone

Table 1 | Ingredients and composition of the basal diet for young piglets.

Table 2 | Effects of dietary soybean isoflavone addition on growth performance of young piglets fed a diet with oxidized fish oil.

Table 3 | Effect of dietary soybean isoflavone addition on morphology of intestine in young piglets fed a diet with oxidized fish oil.

Table 4 | Effect of dietary soybean isoflavone addition on antioxidant indices of jejunal mucosa in young piglets fed a diet with oxidized fish oil.

Table 5 | Effect of dietary soybean isoflavone addition on the cell-mediated immunologic factors of jejunal mucosa¹ in young piglets fed a diet with oxidized fish oil.

Table 6 | Effect of dietary soybean isoflavone addition on the co-oxidation and immune-related factors of jejunal mucosa¹ in young piglets fed a diet with oxidized fish oil.